

REMARKS

Reconsideration of the rejections set forth in the Office action mailed February 5, 2003 is respectfully requested. Claims 1-7, 18, 23-33, and 38 are presently under examination. Claims 23-33 and 38 are cancelled by the present amendment.

I. Amendments

Claim 1 has been amended to recite that the preprocessed mRNA is preprocessed mRNA coding for a human p53 protein.

Claim 2 is amended to describe the backbone linkages in the morpholino oligomers without reference to the figures, using the description in the specification at page 5, lines 8-10 and 20-21, and at page 8, lines 6-8. The morpholino subunit structure shown in Figs. 1A-D is included in the claims. Claim 3 is amended to show the linkage depicted in Figure 2B-B.

Claims 23-33 are cancelled to expedite prosecution.

No new matter is added by any of the amendments.

II. Objections to Claims

References to Figures in claims 2, 3, 25 to 26 were objected to. As noted above, claims 25-26 have been cancelled, and claims 2-3 have been amended to remove the references to the Figures.

III. Rejections under 35 U.S.C. §112, Second Paragraph

Claims 2 and 25 were also rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims included reference to structures having variables which were not defined in the claims. As noted above, claim 25 has been cancelled, and claim 2 has been amended to remove the references to these structures.

In view of the foregoing, the applicants submit the claims comply with the requirements of 35 U.S.C. §112, second paragraph.

IV. Rejections under 35 U.S.C. §112, First Paragraph

Claims 1-7 and 23-33 were rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. This rejection is respectfully traversed for the following reasons.

Claims 23-33 have been cancelled to expedite prosecution.

Claim 1, as amended, is directed to an antisense compound having an uncharged morpholino backbone and a base sequence between 12 and 25 nucleotide bases in length which is complementary to a target region of a selected preprocessed mRNA coding for a human p53 protein, where the 5' end of the target region is "1-25 bases downstream of a normal splice acceptor site in the preprocessed mRNA" (emphasis added). As shown in the specification, such morpholino antisense oligomers targeted downstream of a normal splice acceptor site were effective to inhibit normal splicing of the preprocessed mRNA, even though they do not directly overlap the normal splice acceptor site.

The Examiner states that "the specification does not describe the location and sequence of the splice acceptor sites" and that the splice acceptor sites are "highly variable". On the contrary, the normal splice acceptor sites in human p53 mRNA were known and available from public sources, such as Genbank, at the time of filing of the application. For example, the specification cites Genbank Accession No. X54156, which provides specific intron and exon locations for the human p53 gene, at page 23, line 4 and in the Sequence Table on page 35. The normal splice acceptor sites (as described in the specification on page 11, and as known in the art) are at the 5'-intron/exon-3' junctions. These sites can be easily identified in the gene sequence provided in Genbank Accession No. X54146, using the intron/exon locations provided therein. (See also the sentence bridging pages 16-17, which refers the reader to "Genbank or similar nucleic acid databases" as sources of the gene sequences of selected proteins, "including exon/intron sequences and junctions".)

Therefore, the specification clearly provides means for determining any sequence "between 12 and 25 nucleotide bases in length which is complementary to a target region of a preprocessed

mRNA coding for a human p53 protein, where the 5' end of the target region is 1-25 bases downstream of a normal splice acceptor site in the preprocessed mRNA".

In view of the foregoing, the applicants submit that claim 1 and its dependent claims comply with the written description requirements of 35 U.S.C. §112, first paragraph.

V. Further Rejections under 35 U.S.C. §112, First Paragraph

Claims 23-33 and 38 were rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and use the invention without undue experimentation.

As noted above, claims 23-33 have been cancelled to expedite prosecution, thereby obviating this rejection.

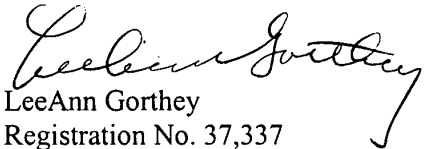
VI. Conclusion

In view of the foregoing, the applicant submits that the claims now pending are now in condition for allowance. A Notice of Allowance is, therefore, respectfully requested.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is encouraged to call the undersigned at (650) 838-4403.

Respectfully submitted,

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